Math 212
Quiz 15

M 03 Oct 2016

Your name: _____

Exercise

(2 pt) Consider the function $f : \mathbf{R}^2 \to \mathbf{R}$ given by

$$f(x, y) = x^4 - x^2 y^2 + y^4.$$

Compute the directional derivative of f at the point $(x, y) = (1, 1)$ in the direction of the vector $\mathbf{v} = (2, 2)$. *Hint:* Note that $\mathbf{v}$ is not a unit vector. Recall the relationship between the directional derivative and the gradient.